ST-V3S

E Model

FM STEREO/FM-AM TUNER

SPECIFICATIONS

GENERAL

System: PLL quartz-locked digital synthesizer system
FM stereo, FM/AM superheterodyne tuner

Power Requirements: 120, 220 or 240 V ac adjustable, 50/60 Hz
Memory back-up power: 3 V dc, two batteries, IEC designation R6 (size AA)
Battery life: approx. 1 year with Sony SUM-3 (NS) New Super batteries

Power Consumption: 8 watts

Dimensions: Approx. 355(w) x 55(h) x 270(d) mm
14(w) x 2 1/4 (h) x 10 3/4 (d) inches
including projecting parts and controls

Weight: Approx. 2.2 kg, 4 lbs 15 oz net
Approx. 2.8 kg, 6 lbs 3 oz in shipping carton

FM TUNER SECTION

Tuning Range: 87.5 MHz – 108 MHz

Antenna Terminals: 300 Ω, balanced
75 Ω, unbalanced

Intermediate Frequency: 10.7 MHz

	(at 75 kHz deviation)
Sensitivity	at 50 dB quieting 16.1 dBf, 3.5 μV (mono) 38.3 dBf, 45 μV (stereo)
Usable Sensitivity	10.3 dBf, 1.8 μV (IHF)
Signal-to-noise Ratio	82 dB (mono) 77 dB (stereo)
Harmonic Distortion at 1 kHz	0.15 % (mono) 0.3 % (stereo)
IM Distortion	0.15 % (mono) 0.3 % (stereo)
Separation at 1 kHz	45 dB
Frequency Response	40 Hz–12.5 kHz ±0.5 dB 30 Hz–15 kHz $^{+0.5}_{-2.0}$ dB
Selectivity	at 400 kHz 65 dB

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

SONY®

SERVICE MANUAL

ST-V3S

Capture Ratio:	1.0 dB
AM Suppression Ratio:	54 dB
Image Response Ratio:	50 dB
IF Response Ratio:	90 dB
Spurious Response Ratio:	70 dB
RF Intermodulation:	60 dB (IHF)
Muting Threshold:	Approx. 25 dBf, 10 μV
Output Level/impedance:	at 75 kHz deviation 550 mV, 3.3 kΩ

SW/MW TUNER SECTION

		SW_1	SW_2	MW
Tuning Range		3.2 MHz – 7.3 MHz	9.5 MHz – 21.75 MHz	522 kHz – 1,602 kHz
Antenna	ferrite-rod antenna	none	none	provided
	external antenna terminal	provided	provided	provided
Intermediate Frequency		450 kHz	450 kHz	450 kHz
Usable Sensitivity	ferrite-rod antenna	—	—	200 μV/m (at 999 or 1,000 kHz)
	external antenna	20 μV (at 5 MHz)	30 μV (at 15 MHz)	30 μV (at 999 or 1,000 kHz)
Signal-to-Noise Ratio		54 dB (at 5 mV)	54 dB (at 5 mV)	54 dB (at 50 mV/m)
Harmonic Distortion		0.3% (at 5 mV, 400 Hz)	0.3% (at 5 mV, 400 Hz)	0.3% (at 50 mV/m, 400 Hz)
Selectivity		30 dB (9 kHz)	30 dB (9 kHz)	35 dB (9 kHz) 38 dB (10 kHz)

While the information given is true at the time of printing, small production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

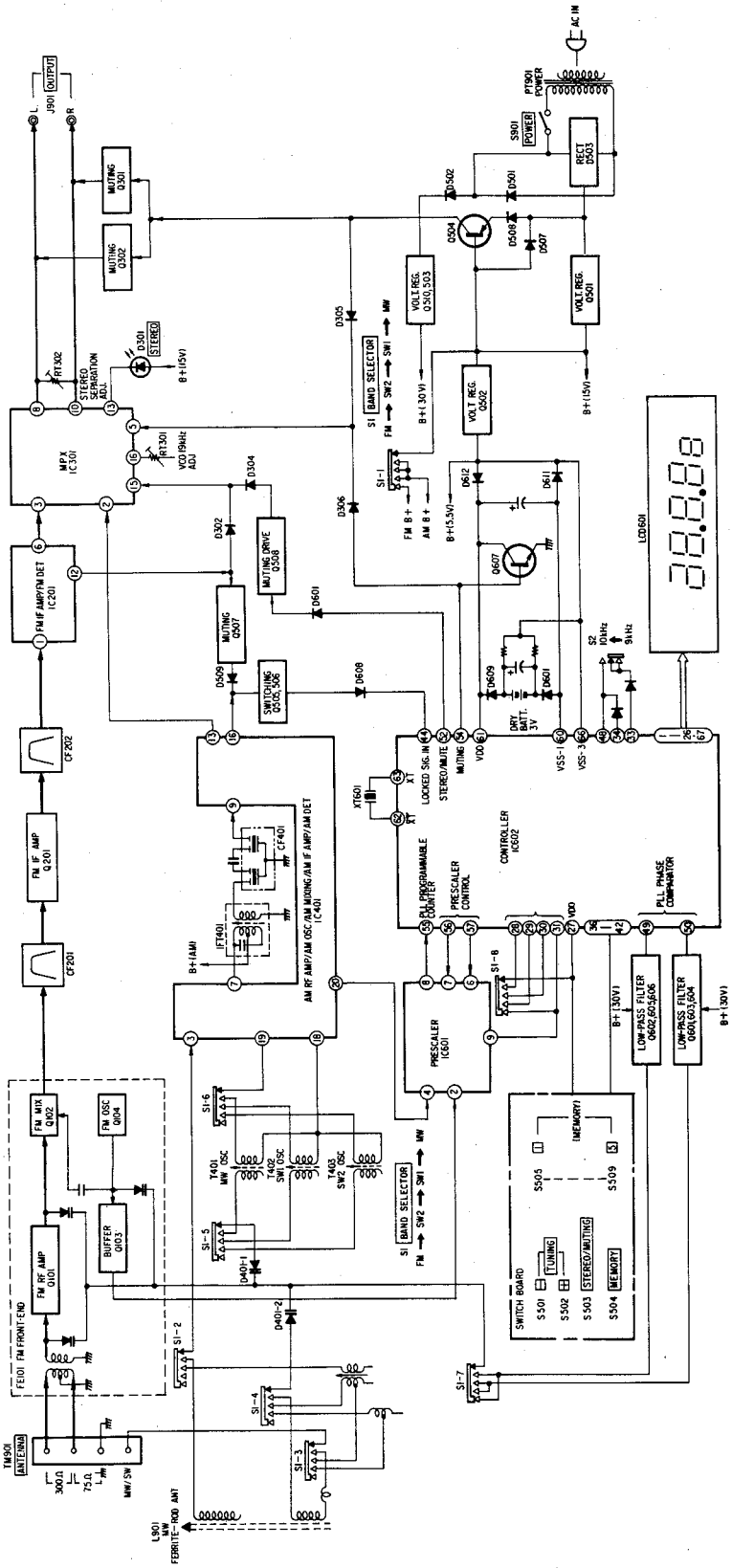
FEATURES

The Sony ST-V3S FM stereo/FM-AM tuner provides accurate and easy tuning with digital synthesizer system in a remarkably compact cabinet.

- The quartz-locked frequency-synthesizer system allows accurate and stable tuning that is not affected by temperature variations or long period usage.
- Each station preset button allows you to memorize 4 staitons: one station for each band, and to select these memorized stations with the touch of a button.
- In the manual tuning mode, quick and accurate station selection is possible with an electronic digital readout on the frequency display window.
- The back-lighted LCD (liquid crystal display) window clearly shows the frequency received, band, tuning, muting, memorystandby and the selected station preset button number.
- The memory back-up batteries retain the memory contents when the power is turned off.
- An FM muting circuit is incorporated to eliminate any interstation noise.
- The fast frequency scanning makes SW tuning easy.
- Slim, smart case.

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

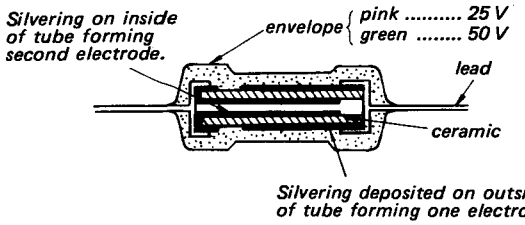


1-2. THE CERAMIC CAPACITORS

This set uses tube-type ceramic capacitors whose shape is identical with the carbon resistors. Be careful not to use resistors instead of capacitors in repairing.

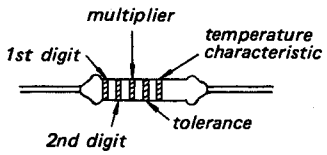
Disc-type ceramic capacitors can be used for replacing those originally used in the set.

Two kinds of drilled holes are provided in some patterns for mounting the tube-type and disc-type ceramic capacitors. Use appropriate holes where applicable.

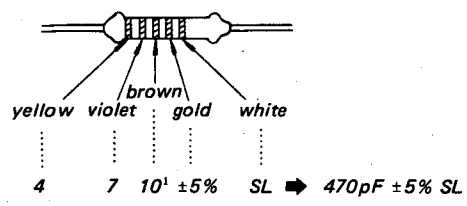

Silvering on inside of tube forming second electrode.
envelope
pink ..... 25 V
green ..... 50 V
lead
ceramic
Silvering deposited on outside of tube forming one electrode.

COLOR CODE (in pF)

Color	1st or 2nd Digit	Multiplier	Tolerance	Temperature characteristic
brown	1	10^1		Y
red	2	10^2		D
orange	3	10^3		
yellow	4	10^4		RH
green	5			
blue	6			
violet	7			UJ
gray	8		±30%	X
white	9			SL
black	0	10^0	±20%	CH
gold		10^{-1}	± 5%	V
silver		10^{-2}	±10%	B



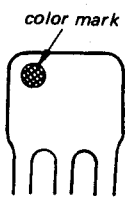
Example:



• IF OFFSET ADJUSTMENT (FM IF)

Diode Installations Depending on the Ceramic Filters (CF201 – 202)

This set employs two ceramic filters (CF201 – 202) which should have the same colour marking to identify their center frequency. Therefore FM IF offset adjustment by diodes (D604 – 605) installation is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



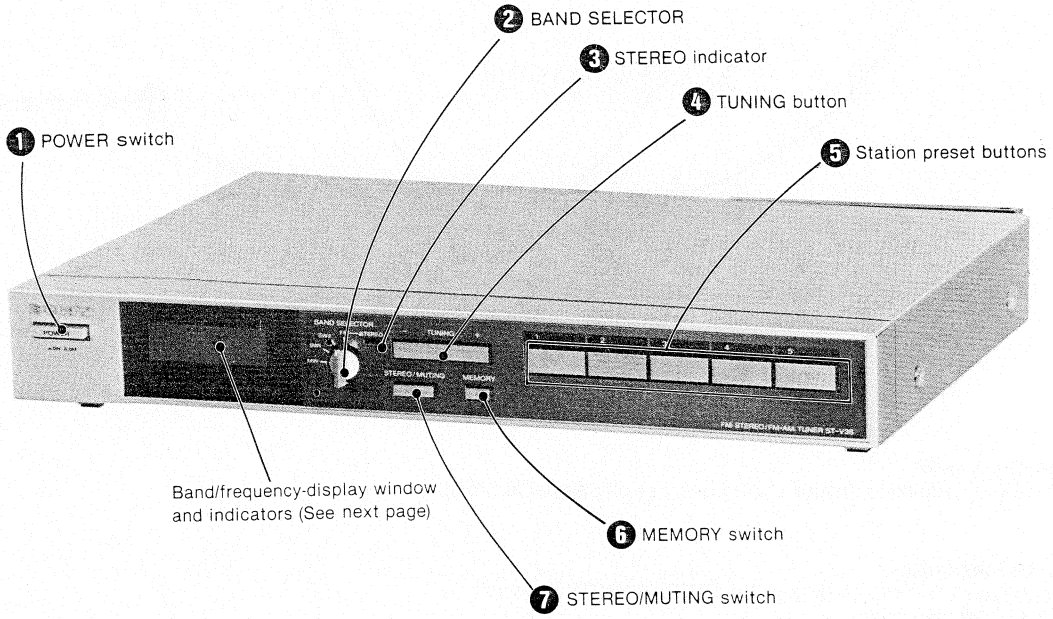
Ceramic filter		Diode installation		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	D604	D605	
White	10.750	X	O	10.750
Red	10.700	X	X	10.700
Black	10.650	O	X	10.650

O: installed
X: not installed

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i.e., of same colour coding should be used for CF201 and CF202.

1-3. LOCATION AND FUNCTION OF CONTROLS

Each number in the photo is keyed to the descriptive text.



❶ POWER switch
Depress to turn on the power. To turn the power off, press the switch again.

❷ BAND SELECTOR
Selects the desired band: FM, MW, SW1 or SW2. The selected band will be indicated in the band/frequency-display window.

❸ STEREO indicator
This indicator will light when an FM stereo program of sufficient signal strength is tuned in with the STEREO/MUTING switch engaged.

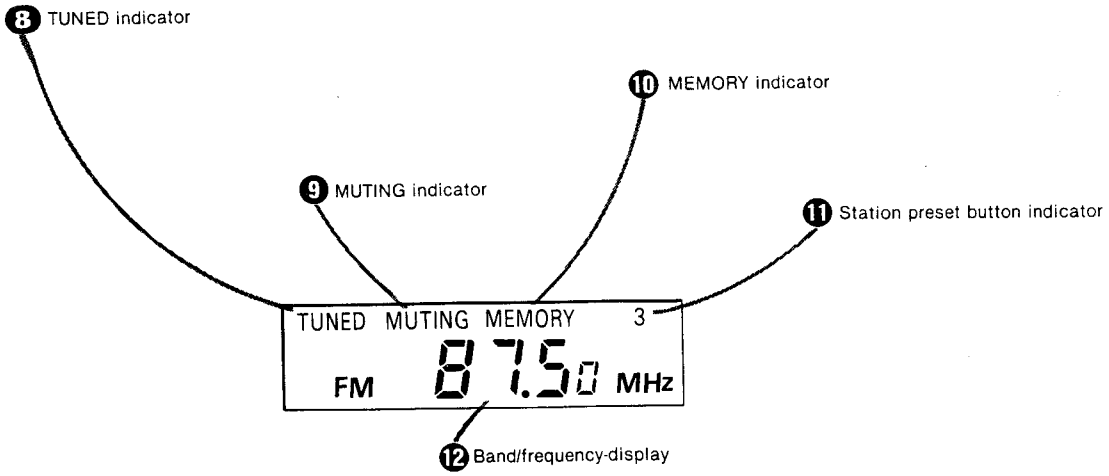
❹ TUNING button
Press either side of this button to change the frequency. Press the left side (-) to go to a lower frequency and the right side (+) to go to a higher. To change the frequency continuously until the desired frequency is received, keep the button depressed. The frequency figures will change rapidly. To change the frequency slowly, successively press and immediately release the button.

❺ Station preset buttons
To call up a memorized station, press the appropriate button.

❻ MEMORY switch
Press to operate memory circuit. The MEMORY indicator will appear in the band/frequency-display window for a few seconds indicating that the memory circuit is standing by.

❼ STEREO/MUTING switch
This switch serves the dual purpose of a mode and FM muting switch.
Normally keep this switch engaged (the MUTING indicator illuminates) to eliminate FM interstation noise while tuning from station to station. The tuner operates in stereo mode for stereo sound sources and will be automatically switched to mono mode for monaural sound sources.
When you want to tune in a very weak station, or when an FM program is too noisy, press the switch to disengage it. (The MUTING indicator will go out.) This will enable the tuner to receive weak stations, although the stereo feature is sacrificed. In this case, keep the amplifier volume down to avoid speaker damage caused by the interstation noise.

BAND/FREQUENCY-DISPLAY WINDOW AND INDICATORS



8 TUNED indicator
This indicator illuminates when a sufficiently strong signal is tuned in.

9 MUTING indicator
This indicator illuminates when the STEREO/MUTING switch is engaged in FM reception.

10 MEMORY indicator
When the MEMORY switch is pressed, "MEMORY" will appear for a few seconds indicating that the memory circuit is standing by.

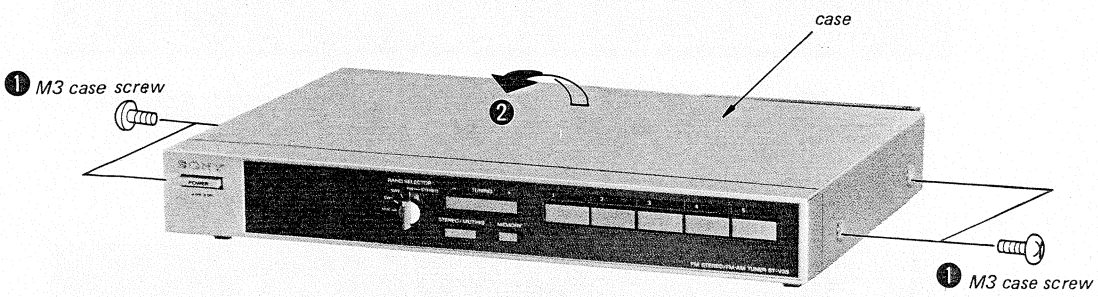
11 Station preset button indicator
When the station preset button is pressed, a figure from 1 to 5 corresponding to the pressed button will appear.

12 Band/frequency-display
Permits reading the received frequency at a glance from the figures.

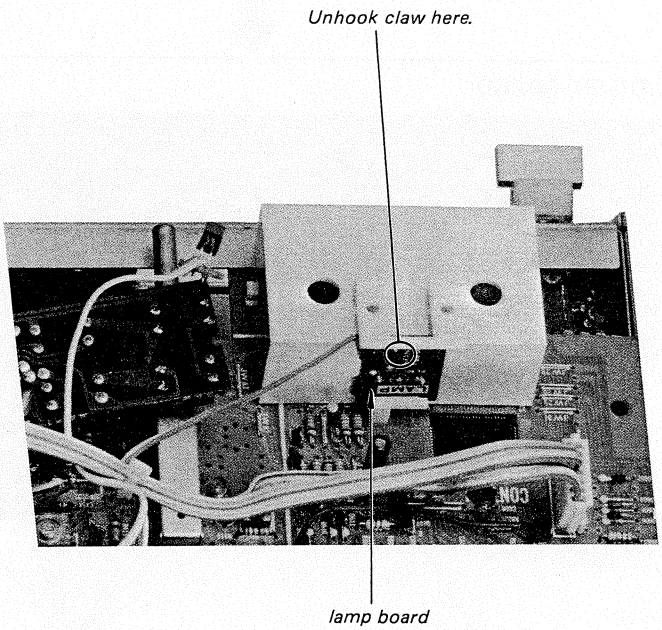
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

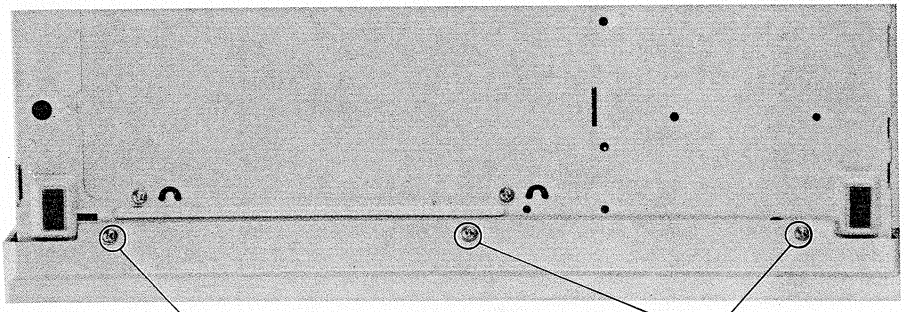
CASE



LAMP BOARD AND LAMP PL901

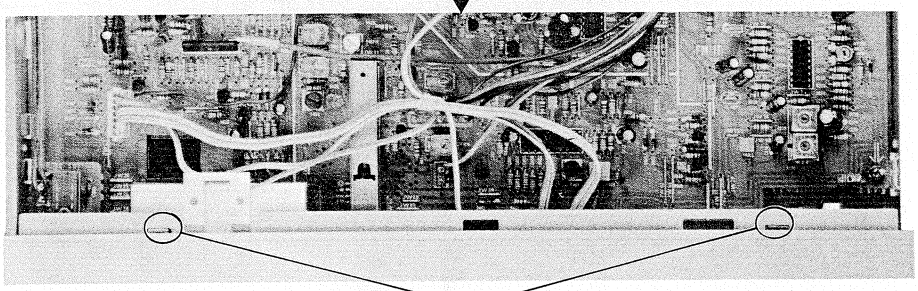


FRONT PANEL



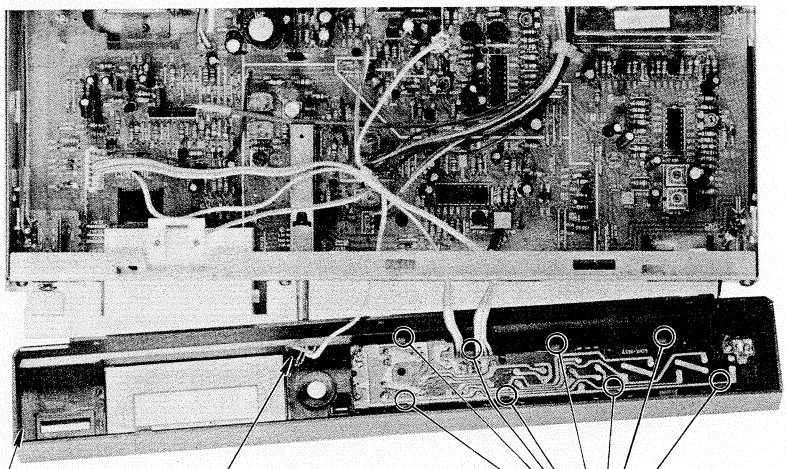
❶ Remove a + BVTT3 x 6 screw.

❷ Remove two + BVTT3 x 8 screws and panel plate.



❸ Unhook two front-panel claws from subpanel.

SWITCH BOARD/LED BOARD

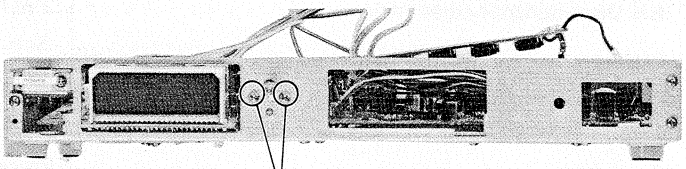


front panel

Pull off LED board from LED groove in the front panel.

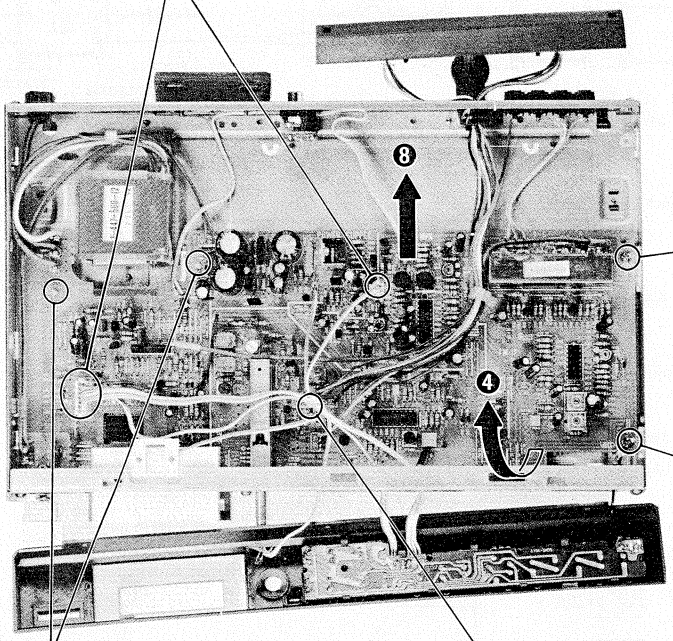
Unhook eight (8) claws from board.

TUNER BOARD



❻ *Remove two (2) + BVTT 3 x 6 screws from band switch.*

❸ *Remove connectors from switch and LED boards. Reroute the wires over the subpanel and re-connect the connectors when desired.*



❽ *Move tuner board backward clearing power transformer and band-switch shaft.*

❺ *Remove + BVTT3 x 6 screw.*

❶ *Remove + BVTT3 x 6 screw and grounding lug. Reroute grounding lead over the subchassis and re-connect grounding lug to chassis when desired.*

❹ *Move front panel onto tuner board.*

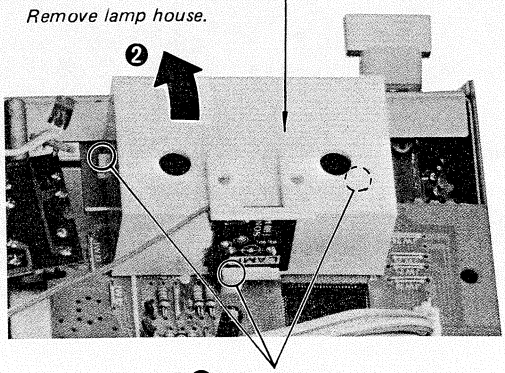
❼ *Release tuner board from two board supports. Do not break the board at the left side.*

❷ *Untie the wire clamp.*

LIQUID CRYSTAL DISPLAY

lamp house

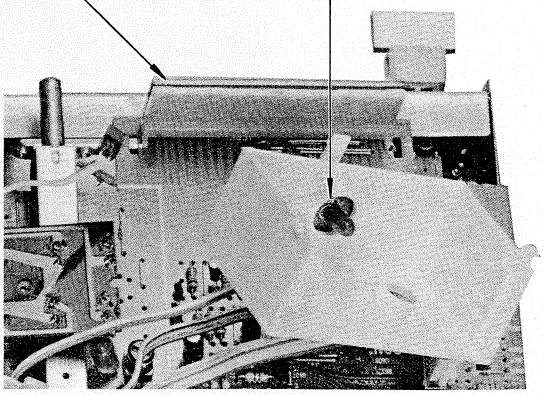
Remove lamp house.



❶ *Unhook claw here.*

liquid crystal display (LCD601)

lamp (PL901)



SECTION 3
ADJUSTMENTS

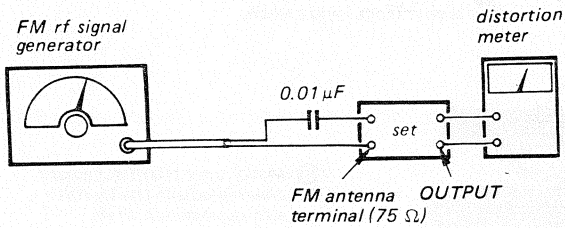
FM SECTION

FM Discriminator Alignment

Setting:

BAND SELECTOR switch . . . . FM
STEREO/MUTING switch . . . . OFF

Procedure:

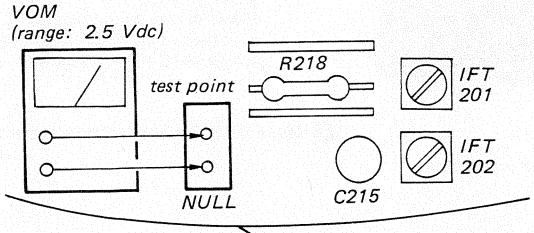


Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Modulation: 400 Hz, 75 kHz deviation (100%)

1. Tune the set to 98MHz.
2. Adjust IFT201 for 0 V reading on the VOM. . . . . NULL Adjustment

   Note: When the ceramic filter is replaced, these adjustments should be made.

3. Adjust IFT202 for a minimum reading on the distortion meter. . . . . Distortion Adjustment

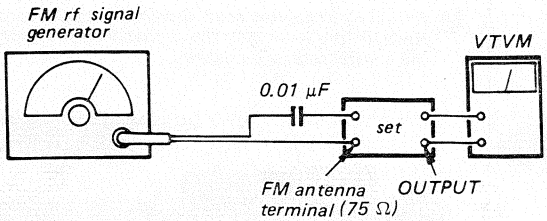


FM Muting Level Adjustment

Setting:

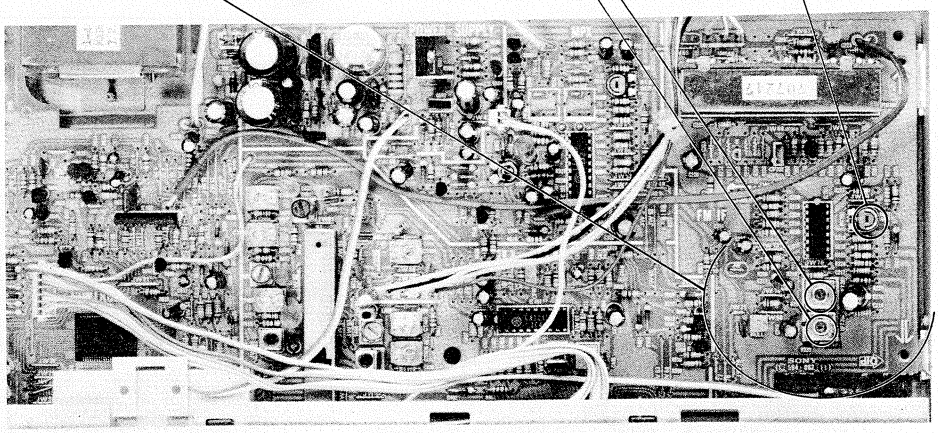
BAND SELECTOR switch . . . . FM
STEREO/MUTING switch . . . . ON

Procedure:



Carrier frequency: 98 MHz
Modulation: 400 Hz, 75 kHz deviation (100 %)
Output level: 10 µV (20 dB)

1. Tune the set to 98 MHz.
2. Adjust RT201 for a point the VTVM reading just drops to 0 V.

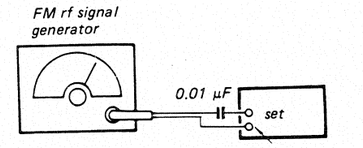


VCO Adjustment

Setting: BAND SELECTOR switch: FM
STEREO/MUTING switch: OFF

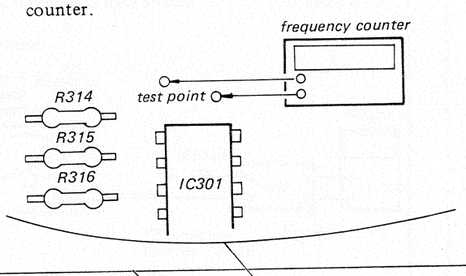
A) Regular Method

Procedure:



Carrier frequency: 98 MHz
Modulation: no modulation
Output level: 1 mV (60 dB)

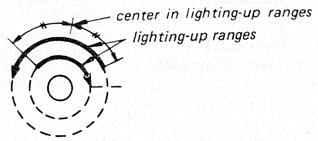
1. Tune the set to 98 MHz.
2. Adjust RT301 for 19 kHz ± 50 Hz on the counter.



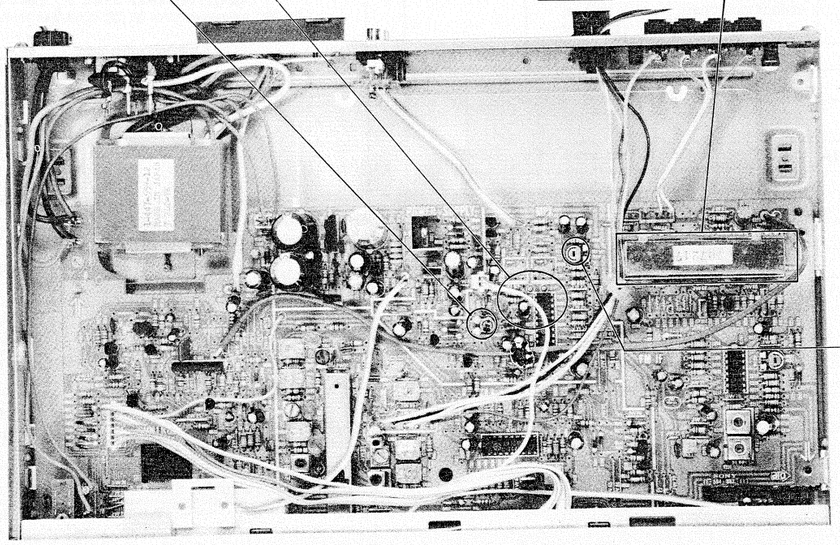
B) Simple Method

Procedure:

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RT301 clockwise or counterclockwise and memorize the lighting-up range of the stereo lamp.
3. Secure RT301 at the center of the lighting-up range of both turns as shown below.



The FM front-end is carefully adjusted at the factory and is supplied as one whole block for replacement.

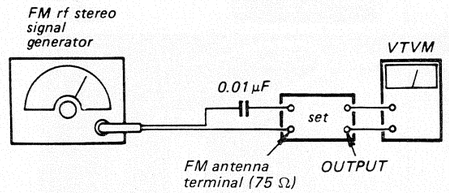


FM Stereo Separation Adjustment

Setting:

BAND SELECTOR switch . . . . . FM
STEREO/MUTING switch . . . . . ON (STEREO)

Procedure:



Carrier frequency: 98 MHz
Output level: 1mV (60 dB)
Modulation: Stereo

Audio (1 kHz): 33.75 kHz deviation (45 %)
Pilot (19 kHz): 7.5 kHz deviation (10 %)
Sub-channel (38 kHz) 33.75 kHz deviation (45 %)

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT302 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT302 for minimum reading.

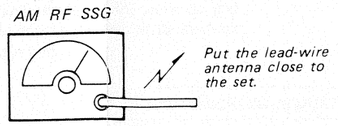
L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

The separations of both channels should be equal.

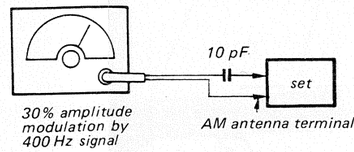
SW/MW SECTION

9 kHz/10 kHz switch (S2): 9 kHz

- **MW**



- **SW**



MW FREQUENCY COVERAGE ADJUSTMENT		
reading on VOM ②	frequency indication	adjustment part
22 ± 0.2 V	1,602 kHz	CT401
1.6 ± 0.1 V	522 kHz	T401

SW1 FREQUENCY COVERAGE ADJUSTMENT		
reading on VOM ②	frequency indication	adjustment part
25 ± 0.2 V	7.3 MHz	CT402
3.0 ± 0.1 V	3.2 MHz	T402

SW2 FREQUENCY COVERAGE ADJUSTMENT		
reading on VOM ②	frequency indication	adjustment part
25 ± 0.2 V	21.75 MHz	CT403
3.0 ± 0.1 V	9.5 MHz	T403

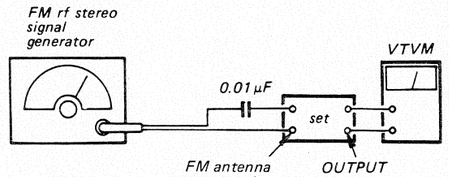
T4(
10 M
Adjust f VOM ①
SW2 TR

FM Stereo Separation Adjustment

Setting:

BAND SELECTOR switch . . . . . .FM
STEREO/MUTING switch . . . . . .ON (STEREO)

Procedure:



Carrier frequency: 98 MHz
Output level: 1mV (60 dB)
Modulation: Stereo

Audio (1 kHz): 33.75 kHz deviation (45 %)
Pilot (19 kHz): 7.5 kHz deviation (10 %)
Sub-channel (38 kHz) 33.75 kHz deviation (45 %)

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT302 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT302 for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ

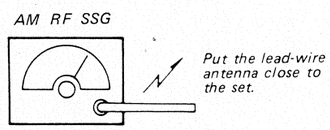
The separations of both channels should be equal.

RT302

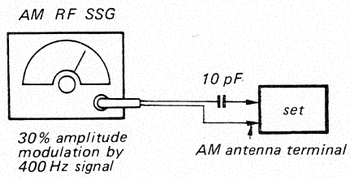
SW/MW SECTION

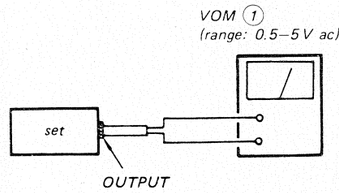
9 kHz/10 kHz switch (S2): 9 kHz

- **MW**



- **SW**





- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

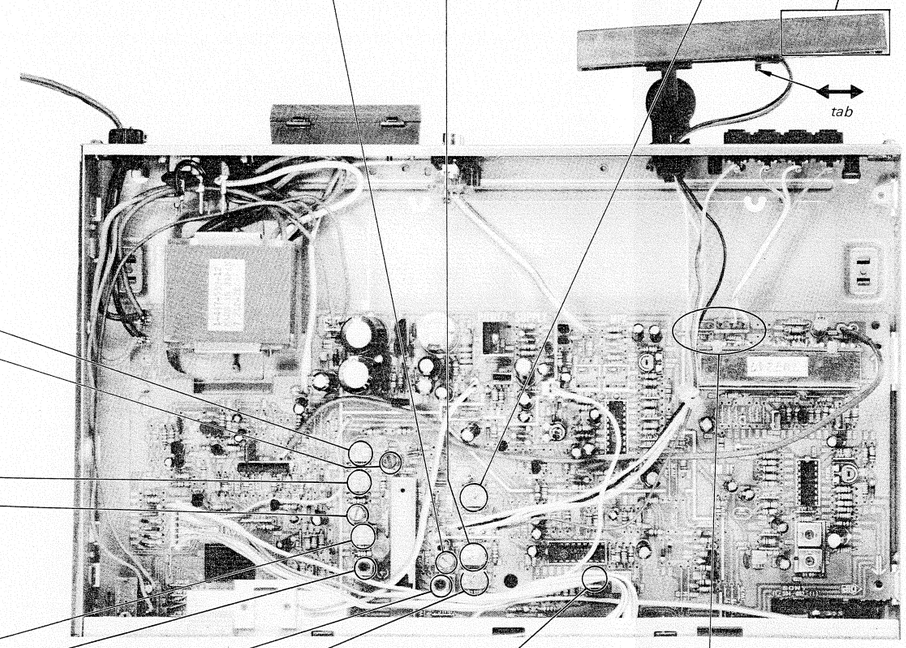
MW FREQUENCY COVERAGE ADJUSTMENT		
reading on VOM ②	frequency indication	adjustment part
22 ± 0.2 V	1,602 kHz	CT401
1.6 ± 0.1 V	522 kHz	T401

SW1 FREQUENCY COVERAGE ADJUSTMENT		
reading on VOM ②	frequency indication	adjustment part
25 ± 0.2 V	7.3 MHz	CT402
3.0 ± 0.1 V	3.2 MHz	T402

SW2 FREQUENCY COVERAGE ADJUSTMENT		
reading on VOM ②	frequency indication	adjustment part
25 ± 0.2 V	21.75 MHz	CT403
3.0 ± 0.1 V	9.5 MHz	T403

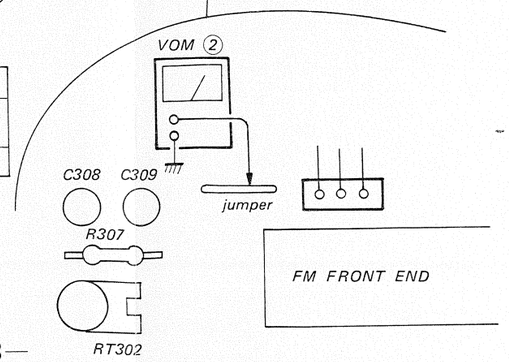
SW1 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ① .	
3.5 MHz	6.5 MHz
T404	CT405

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ① .	
1,404 kHz	603 kHz
CT404	L901



T405	CT406
10 MHz	20 MHz
Adjust for a maximum reading on VOM ① .	
SW2 TRACKING ADJUSTMENT	

450 kHz	IFT401
Adjust for a maximum reading on VOM ① .	
AM IF ALIGNMENT	



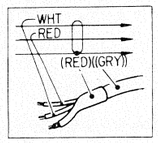
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

Semiconductor Lead Layouts . . . . See page 20.

Note: (for Mounting Diagram)

- Color code of sleeving over the end of the jacket.



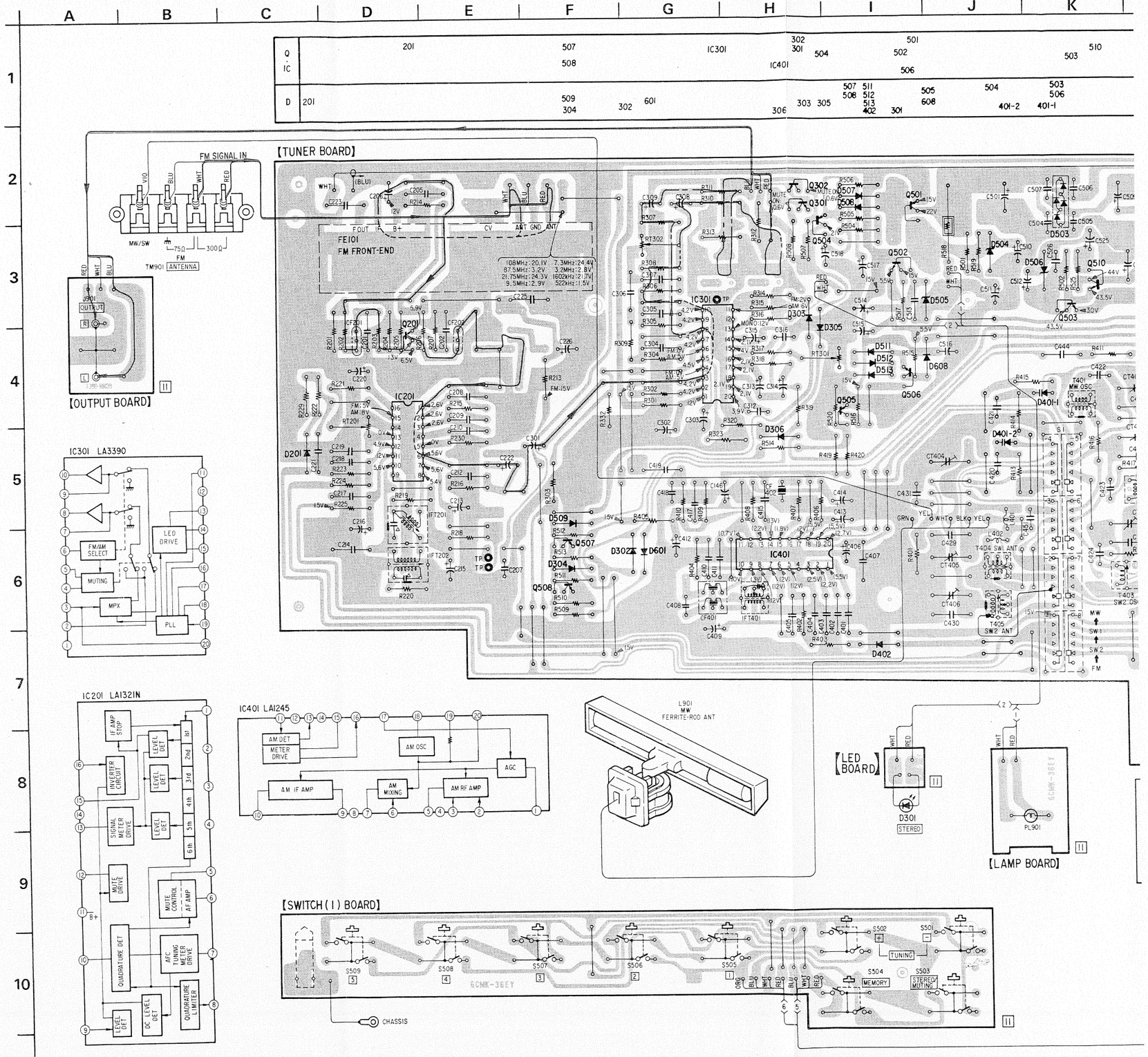
- : indicates side identified with part number.
- : B+ pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

Note: (for Schematic Diagram)

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : adjustment for repair.
- : B+ bus.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 kΩ/V).
  ( ) : AM
- Switch

Ref. No.	Switch	Position
S1	BAND SELECTOR	FM
S2	9 kHz/10 kHz	9 kHz
S501	TUNING/+	OFF
S502	TUNING/–	OFF
S503	STEREO MUTING	OFF
S504	MEMORY	OFF
S505–509	1–5	OFF
S901	POWER	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R

Q IC	201	507 508	IC301	302 301 IC401	504	501 502 506	503	510	IC601 607	IC602	604 603 601	606 605 602				Q IC
D	201	509 304	302	601	306	303 305	507 508 511 512 513 402	301	505 608	504	401-2	503 506 401-1	501 502 612	609 610 611		607 606 605 604	D

【TUNER BOARD】

GNAL IN

FE101
FM FRONT-END

108MHz:20.1V 87.5MHz:3.2V 21.75MHz:24.3V 9.5MHz:2.9V
7.3MHz:24.4V 3.2MHz:2.8V 1602kHz:21.7V 522kHz:1.5V

IC201

RT201 AM:18V FM:5V

IC301

RT301 AM:20V FM:5V

IC401

IC601

IC602

Q201 Q301 Q302 Q501 Q502 Q503 Q504 Q505 Q506 Q507 Q508 Q510 Q601 Q602 Q603 Q604 Q605 Q606 Q607

D201 D301 D302 D303 D304 D305 D306 D401-1 D401-2 D402 D501 D502 D503 D504 D505 D506 D507 D508 D509 D511 D512 D513 D601 D602 D604 D605 D606 D607 D608 D609 D610 D611 D612

T401 MW OSC
T402 SW1 OSC
T403 SW2 OSC
T405 SW2 ANT
T406 SW1 ANT

MW SW1 SW2 FM

S1

X601

DRY BATT CASE SIZE "AA" (IEC DESIGNATION R6) 2PCS,3V

CP901 AC IN

SELECT POSITION 120V 220V 240V

VS VOLTAGE SELECTOR

PT901 POWER TRANSFORMER

S901 POWER STAND BY ON

【POWER SWITCH BOARD】

S2 9kHz → 10kHz

【SWITCH(2)BOARD】

IC401 LA1245

AM DET METER DRIVE
AM OSC
AGC
AM IF AMP
AM MIXING
AM RF AMP

L901 MW FERRITE-ROD ANT

【LED BOARD】

D301 STEREO

【LAMP BOARD】

PL901

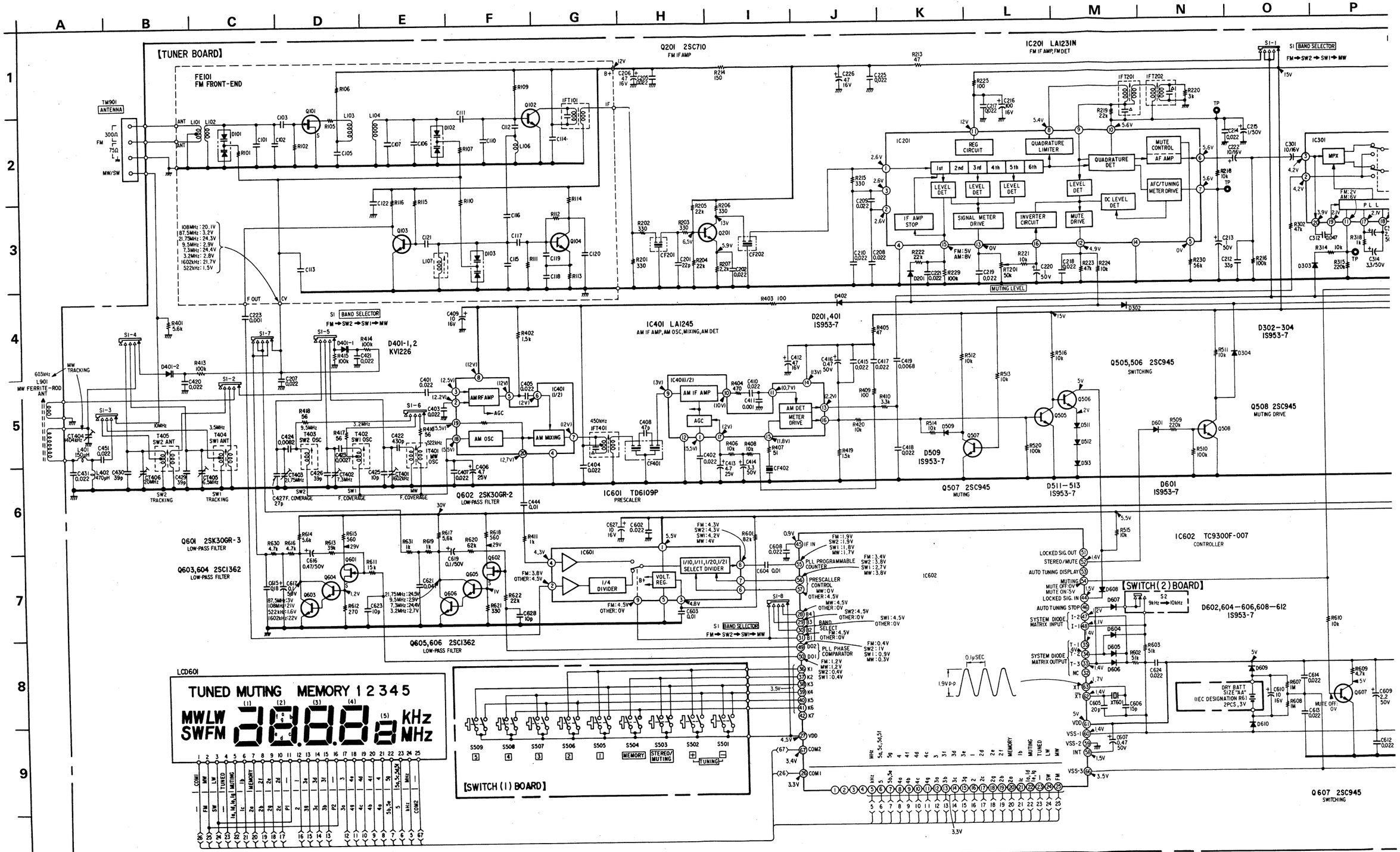
LCD601

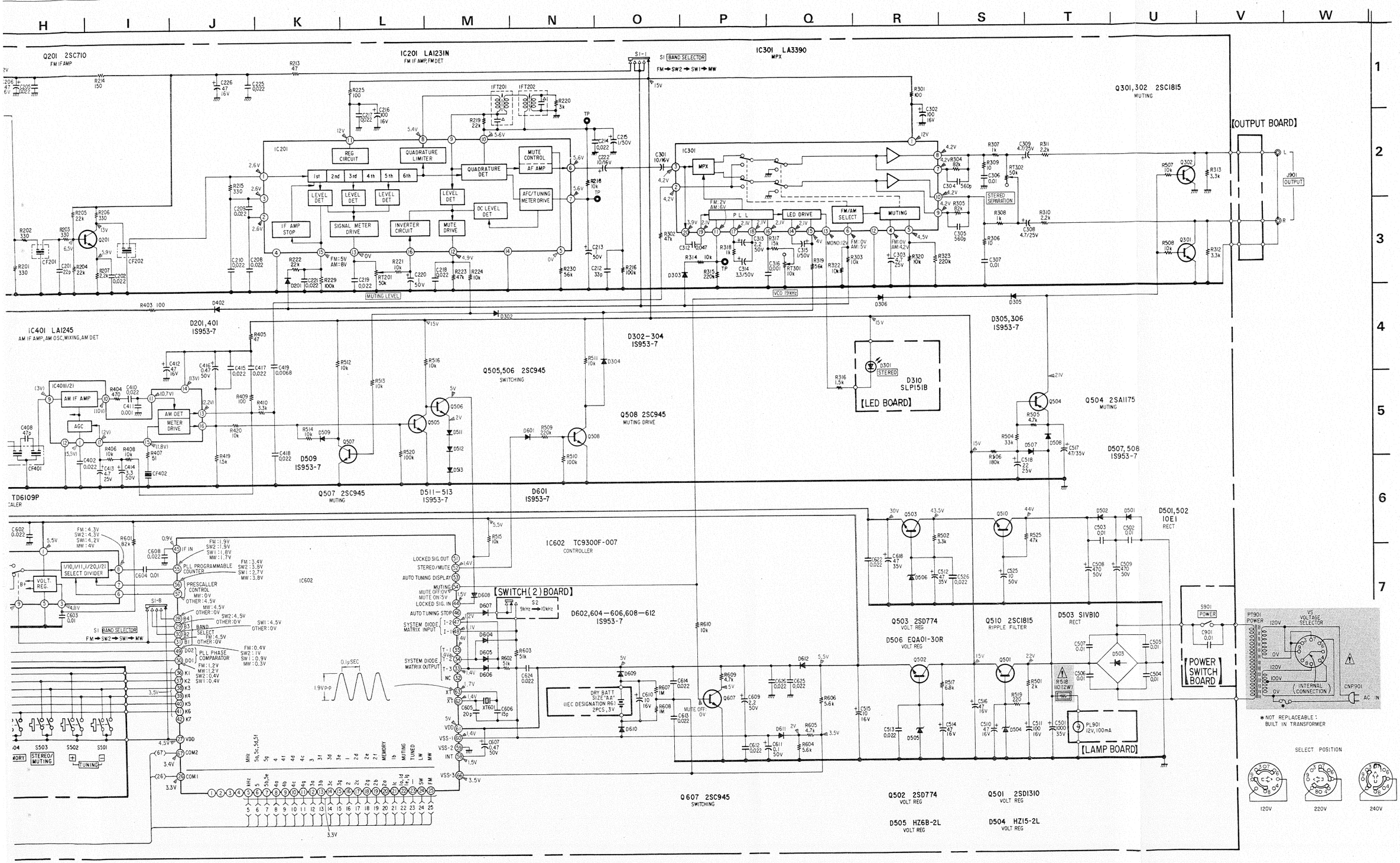
TUNED MUTING MEMORY 1 2 3 4 5

【SWITCH(1)BOARD】

S501 TUNING
S502 TUNING
S503 STEREO/MUTING
S504 MEMORY
S505
S506
S507
S508
S509

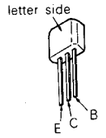
CHASSIS


[TUNER BOARD]
FE101 FM FRONT-END
Q201 2SC710 FM IF AMP
IC201 LA1231N FM IF AMP,FM DET
IC401 LA1245 AM IF AMP, AM OSC, MIXING, AM DET
IC601 TD6109P PRESCALER
IC602 TC9300F-007 CONTROLLER
Q602 2SK30GR-2 LOW-PASS FILTER
Q601 2SK30GR-3 LOW-PASS FILTER
Q603,604 2SC1362 LOW-PASS FILTER
Q605,606 2SC1362 LOW-PASS FILTER
Q505,506 2SC945 SWITCHING
Q508 2SC945 MUTING DRIVE
Q507 2SC945 MUTING
Q607 2SC945 SWITCHING
D401-1,2 KV1226
D201,401 IS953-7
D302-304 IS953-7
D509 IS953-7
D511-513 IS953-7
D601 IS953-7
D602,604-606,608-612 IS953-7
S1 BAND SELECTOR FM→SW2→SW1→MW
[SWITCH(1)BOARD]
[SWITCH(2)BOARD]
LCD601
TUNED MUTING MEMORY 1 2 3 4 5
MW LW SW FM
kHz MHz
REG CIRCUIT
QUADRATURE LIMITER
QUADRATURE DET
MUTE CONTROL AF AMP
AFC/TUNING METER DRIVE
LEVEL DET
IF AMP STOP
SIGNAL METER DRIVE
INVERTER CIRCUIT
MUTE DRIVE
DC LEVEL DET
MUTING LEVEL
MPX
PLL
AM IF AMP
AM DET METER DRIVE
AM OSC
AM MIXING
AGC
1/4 DIVIDER
VOLT. REG.
I/10,I/11,I/20,I/21 SELECT DIVIDER
PLL PROGRAMMABLE COUNTER
PRESCALLER CONTROL
PLL PHASE COMPARATOR
BAND SELECT
IF IN
LOCKED SIG.OUT
STEREO/MUTE
AUTO TUNING DISPLAY
MUTING
LOCKED SIG. IN
AUTO TUNING STOP
SYSTEM DIODE MATRIX INPUT
SYSTEM DIODE MATRIX OUTPUT
DRY BATT SIZE "AA" (IEC DESIGNATION R6) 2PCS, 3V
MUTE OFF: 0V
0.1μSEC
1.9VP-P
MW TRACKING
SW2 TRACKING
SW1 TRACKING
SW2 F. COVERAGE
SW1 F. COVERAGE
MW F. COVERAGE
SW2 SW. OSC
SW1 SW. OSC
MW OSC
SW2 ANT
SW1 ANT
MW FERRITE-ROD ANT
TM901 ANTENNA
MUTING TIMING
SWITCHING
MUTING DRIVE
MUTING
CONTROLLER

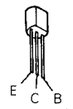

Q201 2SC710
FM IF AMP
IC201 LA1231N
FM IF AMP, FM DET
S1 BAND SELECTOR
FM→SW2→SW1→MW
IC301 LA3390
MPX
Q301,302 2SC1815
MUTING
[OUTPUT BOARD]
J901 OUTPUT
IC401 LA1245
AM IF AMP, AM OSC, MIXING, AM DET
D201,401 1S953-7
D302-304 1S953-7
D305,306 1S953-7
Q505,506 2SC945
SWITCHING
Q508 2SC945
MUTING DRIVE
D310 SLP151B
[LED BOARD]
Q504 2SA1175
MUTING
D507,508 1S953-7
D509 1S953-7
Q507 2SC945
MUTING
D511-513 1S953-7
D601 1S953-7
D501,502 10E1
RECT
IC602 TC9300F-007
CONTROLLER
[SWITCH(2)BOARD]
D602,604-606,608-612 1S953-7
Q503 2SD774
VOLT REG
Q510 2SC1815
RIPPLE FILTER
D503 SIVB10
RECT
D506 EQA01-30R
VOLT REG
Q502 2SD774
VOLT REG
Q501 2SD1310
VOLT REG
D505 HZ6B-2L
VOLT REG
D504 HZ15-2L
VOLT REG
Q607 2SC945
SWITCHING
[POWER SWITCH BOARD]
[LAMP BOARD]
PL901 12V, 100mA
PT901 POWER
VS VOLTAGE SELECTOR
CNP901 AC IN
* NOT REPLACEABLE : BUILT IN TRANSFORMER
SELECT POSITION
120V
220V
240V
TD6109P
SCALER

• SEMICONDUCTOR LEAD LAYOUTS

2SA1175
2SC2785



2SC945
2SC1362



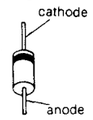
2SC710-13

2SD774

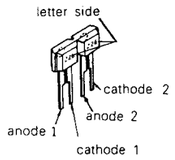
2SD1310

2SK30A-GR3

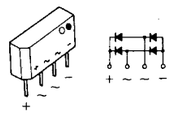
10E1
10E2
1S1555
1S953-7
HZ6B-2L
HZ15-2L
HZ30-2L



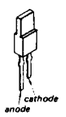
KV1226



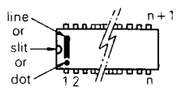
S1VB20



SLP151B

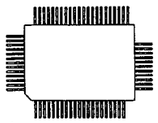


LA1231N
LA3390
LA1245



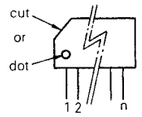
(Top view)

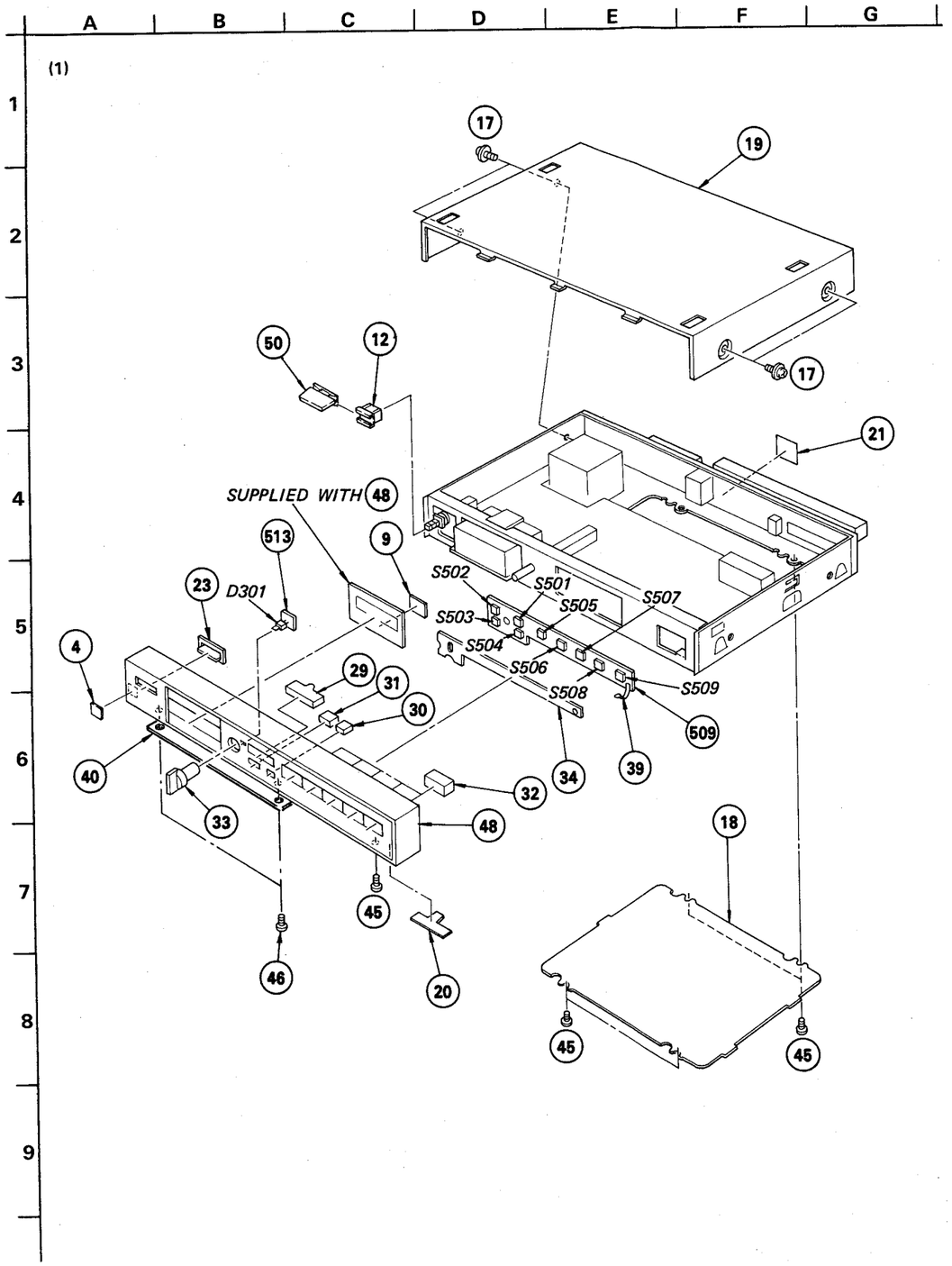
TC9300F-007



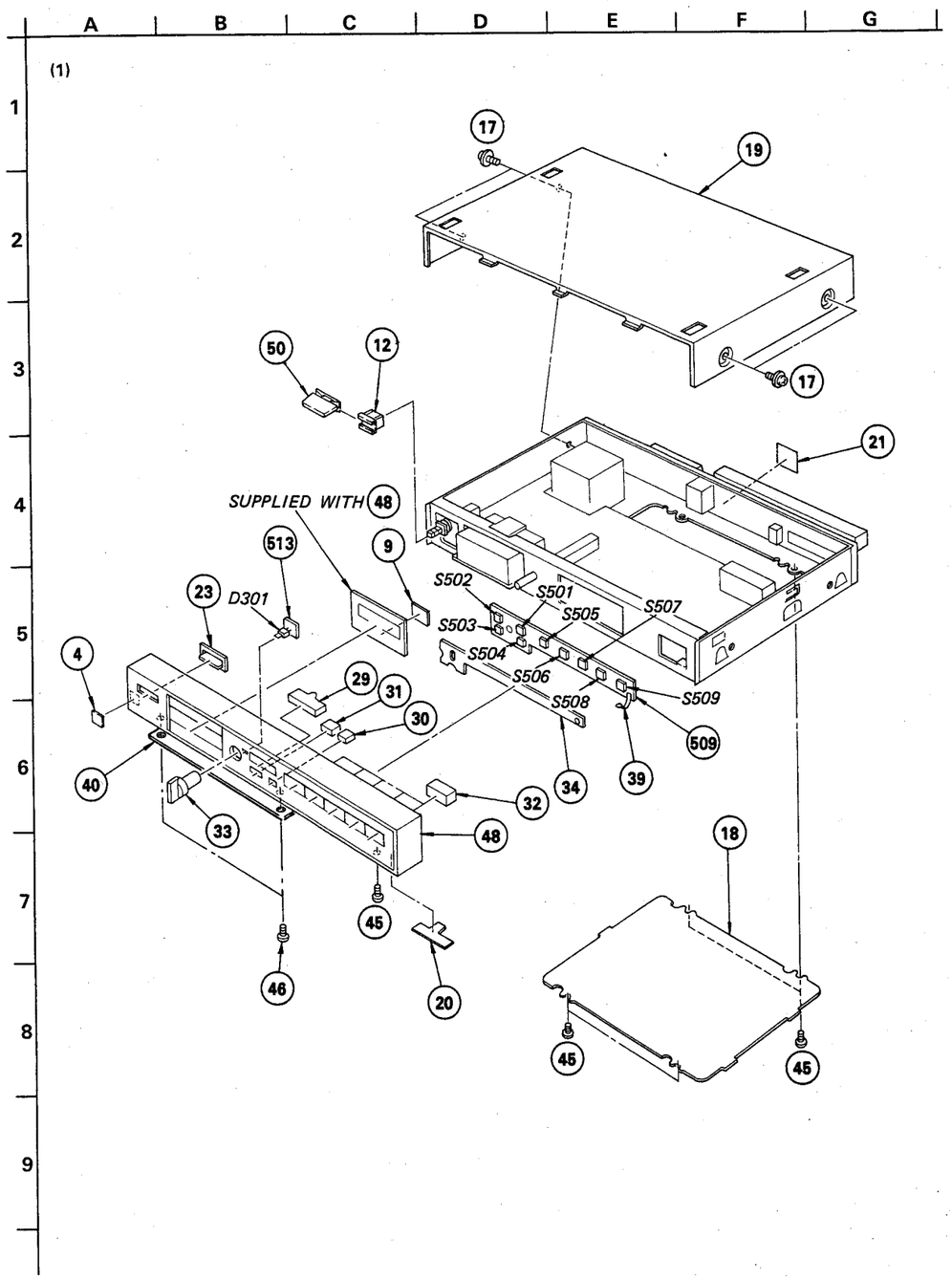
(Top view)

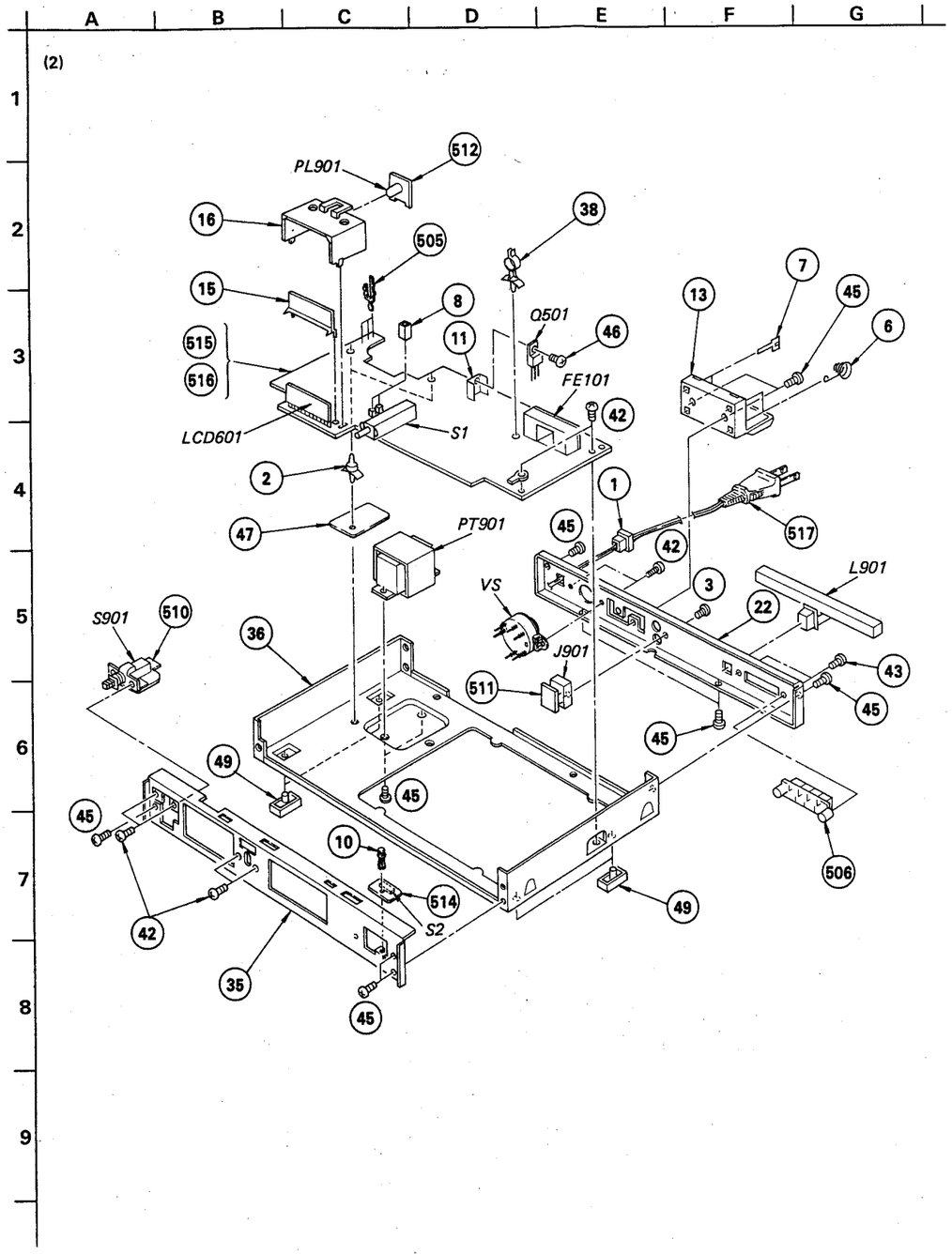
TD6109P





SECTION 5
EXPLODED VIEWS AND PARTS LIST





GENERAL SECTION

No.	Part No.	Description
1	3-703-244-00	BUSHING, CORD
2 ♦	3-703-353-01	SUPPORT, PC BOARD
3	3-703-473-00	SCREW, TERMINAL
4	3-703-710-01	STICKER, SONY SYMBOL (12)
5	3-831-441-11	CUSHION, 23X4X0.5
6	3-883-424-00	SPRING
7	3-883-428-00	PLATE, TERMINAL (POSITIVE)
8 ♦	3-887-524-00	PLATE, SHIELD
9 ♦	4-808-716-00	PROTECTOR (C)
10	4-812-134-11	RIVET NYLON, 3.5
11 ♦	4-875-327-01	HEAT SINK
12 ♦	4-875-466-00	JOINT (F2), KNOB
13	4-875-530-00	CASE, BATTERY
14	.....	
15	4-884-848-00	ILLUMINATOR (ST)
16 ♦	4-884-856-00	HOUSE, LAMP
17	4-886-821-11	SCREW, M3 CASE
18 ♦	4-886-844-01	PLATE, BOTTOM
19	4-886-845-11	CASE
20	4-886-935-00	LABEL, 9K-10K
21	4-886-962-00	LABEL, MODEL NUMBER (E1)
22 ♦	4-886-964-21	PLATE, JACK
23	4-886-976-00	ESCUTCHEON, POWER KNOB
24-28	.....	
29	4-888-205-00	KNOB (A), PUSH
30	4-888-206-00	KNOB (B), PUSH
31	4-888-207-00	KNOB (C), PUSH
32	4-888-208-00	KNOB (F), PUSH
33	4-888-210-00	KNOB, SELECT, BAND
34 ♦	4-888-212-00	PLATE, PREVENTION
35 ♦	4-888-213-00	PANEL, SUB
36 ♦	4-888-214-02	CHASSIS
37	.....	
38 ♦	4-888-226-00	CLIP, STAND-OFF
39	4-888-230-00	PLATE, CONTACT
40 ♦	4-888-231-00	RETAINER
41 ♦	4-888-232-00	SPACER
42	7-682-647-01	SCREW +PS 3X6
43	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S
44	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3
45	7-685-871-01	SCREW +BVTT 3X6 (S)
46	7-685-872-01	SCREW +BVTT 3X8 (S)
47	9-911-863-XX	INSULATOR
48	A-4322-497-A	PANEL ASSY
49	X-4886-405-1	FOOT ASSY
50	X-4886-903-0	KNOB (L.S) ASSY, POWER

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
91	1-501-161-00	ANTENNA,FEEDER
92	1-528-027-11	BATTERY, NEW SUPER (SUM-3)(NS)
93	1-556-793-21	CORD, CONNECTION
94	3-701-630-00	BAG, POLYETHYLENE
95	3-773-300-11	MANUAL, INSTRUCTION
96	4-875-574-00	SHEET, PROTECTION
97	4-886-983-00	INDIVIDUAL CARTON
98	4-886-997-00	CUSHION (RIGHT-E), UPPER
99	4-886-998-00	CUSHION (LEFT-E), UPPER
100	4-886-999-00	CUSHION (RIGHT-E), LOWER
101	4-888-201-00	CUSHION (LEFT-E), LOWER
102	4-888-219-00	SPACER, FERRITE-ROD ANTENNA

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ST-V3S

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	♦;1-508-809-00	BASE POST (14MM) 2P
502	♦;1-535-115-00	TERMINAL
503	♦;1-535-116-00	TERMINAL
504	♦;1-535-118-00	TERMINAL
505	♦;1-535-416-00	TERMINAL
506	1-536-705-41	TERMINAL BOARD (TM901)
507	♦;1-560-060-00	PIN, CONNECTOR 2P
508	♦;1-560-338-00	PIN, CONNECTOR 7P
509	♦;1-609-846-00	PC BOARD, SWITCH (1)
510	♦;1-609-847-00	PC BOARD, POWER SWITCH
511	♦;1-609-848-00	PC BOARD, OUTPUT
512	♦;1-609-849-00	PC BOARD, LAMP
513	♦;1-609-850-00	PC BOARD, LED
514	♦;1-609-851-00	PC BOARD, SWITCH (2)
515	1-609-853-00	PC BOARD, TUNER
516	♦;A-4351-349-A	MOUNTED PCB, TUNER
517	⚠;1-551-472-00	CORD, POWER

C201	1-161-263-00	CERAMIC	22PF	5%	50V
C202	1-161-494-00	CERAMIC	0.022MF	30%	25V
C205	1-161-494-00	CERAMIC	0.022MF	30%	25V
C206	1-123-319-00	ELECT	47MF	20%	16V
C207	1-101-005-00	CERAMIC	0.022MF		50V
C208	1-161-494-00	CERAMIC	0.022MF	30%	25V
C209	1-161-494-00	CERAMIC	0.022MF	30%	25V
C210	1-161-494-00	CERAMIC	0.022MF	30%	25V
C212	1-161-265-00	CERAMIC	33PF	5%	50V
C213	1-123-380-00	ELECT	1MF	20%	50V
C214	1-161-494-00	CERAMIC	0.022MF	30%	25V
C215	1-123-380-00	ELECT	1MF	20%	50V
C216	1-123-320-00	ELECT	100MF	20%	16V
C217	1-161-494-00	CERAMIC	0.022MF	30%	25V
C218	1-161-494-00	CERAMIC	0.022MF	30%	25V
C219	1-161-494-00	CERAMIC	0.022MF	30%	25V
C220	1-123-380-00	ELECT	1MF	20%	50V
C221	1-161-494-00	CERAMIC	0.022MF	30%	25V
C222	1-123-356-00	ELECT	10MF	20%	16V
C223	1-161-323-00	CERAMIC	0.001MF	10%	50V
C225	1-161-494-00	CERAMIC	0.022MF	30%	25V
C226	1-123-319-00	ELECT	47MF	20%	16V
C301	1-123-356-00	ELECT	10MF	20%	16V
C302	1-123-320-00	ELECT	100MF	20%	16V
C303	1-123-328-00	ELECT	4.7MF	20%	25V
C304	1-161-320-00	CERAMIC	560PF	10%	50V
C305	1-161-320-00	CERAMIC	560PF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C306	1-161-330-00	CERAMIC	0.01MF	30%	25V
C307	1-161-330-00	CERAMIC	0.01MF	30%	25V
C308	1-123-328-00	ELECT	4.7MF	20%	25V
C309	1-123-328-00	ELECT	4.7MF	20%	25V
C312	1-101-006-00	CERAMIC	0.047MF		50V
C313	1-123-353-00	ELECT	2.2MF	20%	50V
C314	1-123-354-00	ELECT	3.3MF	20%	50V
C315	1-123-380-00	ELECT	1MF	20%	50V
C316	1-104-077-00	POLYSTYRENE	0.001MF	5%	50V
C401	1-161-494-00	CERAMIC	0.022MF	30%	25V
C402	1-161-494-00	CERAMIC	0.022MF	30%	25V
C403	1-161-494-00	CERAMIC	0.022MF	30%	25V
C404	1-161-494-00	CERAMIC	0.022MF	30%	25V
C405	1-161-494-00	CERAMIC	0.022MF	30%	25V
C406	1-123-328-00	ELECT	4.7MF	20%	25V
C407	1-161-494-00	CERAMIC	0.022MF	30%	25V
C408	1-161-267-00	CERAMIC	47PF	5%	50V
C409	1-123-356-00	ELECT	10MF	20%	16V
C410	1-161-494-00	CERAMIC	0.022MF	30%	25V
C411	1-161-323-00	CERAMIC	0.001MF	10%	50V
C412	1-123-319-00	ELECT	47MF	20%	16V
C413	1-123-328-00	ELECT	4.7MF	20%	25V
C414	1-123-354-00	ELECT	3.3MF	20%	50V
C415	1-161-494-00	CERAMIC	0.022MF	30%	25V
C416	1-123-351-00	ELECT	0.47MF	20%	50V
C417	1-161-494-00	CERAMIC	0.022MF	30%	25V
C418	1-101-005-00	CERAMIC	0.022MF		50V
C419	1-161-329-00	CERAMIC	0.0068MF	30%	25V
C420	1-101-005-00	CERAMIC	0.022MF		50V
C421	1-101-005-00	CERAMIC	0.022MF		50V
C422	1-103-716-00	POLYSTYRENE	430PF	5%	50V
C423	1-103-735-00	POLYSTYRENE	0.0027MF	5%	50V
C424	1-103-747-00	POLYSTYRENE	0.0082MF	5%	50V
C425	1-161-301-00	CERAMIC	10PF	5%	50V
C426	1-161-266-00	CERAMIC	39PF	5%	50V
C427	1-161-298-00	CERAMIC	27PF	5%	50V
C429	1-161-266-00	CERAMIC	39PF	5%	50V
C430	1-161-266-00	CERAMIC	39PF	5%	50V
C431	1-101-005-00	CERAMIC	0.022MF		50V
C444	1-161-330-00	CERAMIC	0.01MF	30%	25V
C451	1-101-005-00	CERAMIC	0.022MF		50V
C501	1-123-349-00	ELECT	1000MF	20%	35V
C502	1-101-004-00	CERAMIC	0.01MF		50V
C503	1-101-004-00	CERAMIC	0.01MF		50V
C504	1-101-004-00	CERAMIC	0.01MF		50V

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C505	1-101-004-00	CERAMIC	0.01MF		50V
C506	1-101-004-00	CERAMIC	0.01MF		50V
C507	1-101-004-00	CERAMIC	0.01MF		50V
C508	1-123-363-00	ELECT	470MF	20%	50V
C509	1-123-363-00	ELECT	470MF	20%	50V
C510	1-123-319-00	ELECT	47MF	20%	16V
C511	1-123-320-00	ELECT	100MF	20%	16V
C512	1-123-359-00	ELECT	47MF	20%	35V
C513	1-161-494-00	CERAMIC	0.022MF	30%	25V
C514	1-123-319-00	ELECT	47MF	20%	16V
C515	1-123-356-00	ELECT	10MF	20%	16V
C516	1-123-319-00	ELECT	47MF	20%	16V
C517	1-123-359-00	ELECT	47MF	20%	35V
C518	1-123-330-00	ELECT	22MF	20%	25V
C525	1-123-356-00	ELECT	10MF	20%	50V
C526	1-101-005-00	CERAMIC	0.022MF		50V
C602	1-161-494-00	CERAMIC	0.022MF	30%	25V
C603	1-161-330-00	CERAMIC	0.01MF	30%	25V
C604	1-161-330-00	CERAMIC	0.01MF	30%	25V
C605	1-101-974-00	CERAMIC	20PF	5%	50V
C606	1-102-851-00	CERAMIC	15PF	5%	50V
C607	1-123-351-00	ELECT	0.47MF	20%	50V
C608	1-101-005-00	CERAMIC	0.022MF		50V
C609	1-123-353-00	ELECT	2.2MF	20%	50V
C610	1-123-356-00	ELECT	10MF	20%	16V
C611	1-123-607-00	ELECT	0.1MF	20%	50V
C612	1-161-494-00	CERAMIC	0.022MF	30%	25V
C613	1-161-494-00	CERAMIC	0.022MF	30%	25V
C614	1-161-494-00	CERAMIC	0.022MF	30%	25V
C615	1-130-635-00	FILM	0.18MF	5%	50V
C616	1-123-351-00	ELECT	0.47MF	20%	50V
C617	1-123-607-00	ELECT	0.1MF	20%	50V
C618	1-123-359-00	ELECT	47MF	20%	35V
C619	1-123-607-00	ELECT	0.1MF	20%	50V
C621	1-130-628-00	FILM	0.047MF	5%	50V
C622	1-101-005-00	CERAMIC	0.022MF		50V
C623	1-161-259-00	CERAMIC	10PF	5%	50V
C624	1-161-494-00	CERAMIC	0.022MF	30%	25V
C625	1-161-494-00	CERAMIC	0.022MF	30%	25V
C626	1-161-494-00	CERAMIC	0.022MF	30%	25V
C627	1-102-947-00	CERAMIC	10PF	5%	50V
C628	1-102-947-00	CERAMIC	10PF	5%	50V
C901	1-101-004-00	CERAMIC	0.01MF		50V
CF201	1-527-968-71	FILTER, CERAMIC			
CF202	1-527-968-71	FILTER, CERAMIC			
CF401	1-527-937-00	FILTER, CERAMIC			
CF402	1-527-981-00	FILTER, CERAMIC			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
⚠CNP901	1-551-472-00	CORD, POWER
CT401	1-141-180-00	CAP, TRIMMER 15P
CT402	1-141-180-00	CAP, TRIMMER 15P
CT403	1-141-180-00	CAP, TRIMMER 15P
CT404	1-141-180-00	CAP, TRIMMER 15P
CT405	1-141-180-00	CAP, TRIMMER 15P
CT406	1-141-180-00	CAP, TRIMMER 15P
D201	8-719-815-55	DIODE 1S1555
D301	8-719-901-52	DIODE SLP151B
D302	8-719-815-55	DIODE 1S1555
D303	8-719-815-55	DIODE 1S1555
D304	8-719-815-55	DIODE 1S1555
D305	8-719-815-55	DIODE 1S1555
D306	8-719-815-55	DIODE 1S1555
D401	8-719-912-27	DIODE KV1226
D402	8-719-815-55	DIODE 1S1555
D501	8-719-200-02	DIODE 10E2
D502	8-719-200-02	DIODE 10E2
D503	8-719-511-20	DIODE S1VB20
D504	8-719-910-52	DIODE HZ15-2L
D505	8-719-910-65	DIODE HZ6B2L
D506	8-719-913-02	DIODE HZ30-2L
D507	8-719-815-55	DIODE 1S1555
D508	8-719-815-55	DIODE 1S1555
D509	8-719-815-55	DIODE 1S1555
D510	8-719-815-55	DIODE 1S1555
D511	8-719-815-55	DIODE 1S1555
D512	8-719-815-55	DIODE 1S1555
D513	8-719-815-55	DIODE 1S1555
D601	8-719-815-55	DIODE 1S1555
D602	8-719-815-55	DIODE 1S1555
D604	8-719-815-55	DIODE 1S1555
D605	8-719-815-55	DIODE 1S1555
D606	8-719-815-55	DIODE 1S1555
D608	8-719-815-55	DIODE 1S1555
D609	8-719-815-55	DIODE 1S1555
D610	8-719-815-55	DIODE 1S1555
D611	8-719-815-55	DIODE 1S1555
D612	8-719-815-55	DIODE 1S1555
FE101	A-4344-029-A	FRONT END, FM
IFT201	1-404-400-00	TRANSFORMER, DISCRIMINATOR
IFT202	1-404-401-00	TRANSFORMER, DISCRIMINATOR
IFT401	1-404-383-00	TRANSFORMER, IF

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CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
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- MMH : mH, UH : μH

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SEMICONDUCTORS
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ST-V3S

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC201	8-759-812-31	IC LA1231N
IC301	8-759-833-90	IC LA3390
IC401	8-759-812-45	IC LA1245
IC601	8-759-201-03	IC TD6109P
IC602	8-759-201-31	IC TC9300F-007
J901	1-507-843-00	JACK, PIN 2P
L401	1-407-171-XX	MICRO INDUCTOR 150UH
L402	1-407-177-XX	MICRO INDUCTOR 470UH
L901	1-402-012-21	ANTENNA, FERRITE-ROD (MW)
LCD601	1-806-643-00	DISPLAY PANEL, LIQUID CRYSTAL
PL901	1-518-511-00	LAMP, PILOT
⚠PT901	1-447-559-12	TRANSFORMER, POWER
Q201	8-729-671-13	TRANSISTOR 2SC710-13
Q202	8-729-671-13	TRANSISTOR 2SC710-13
Q301	8-729-178-54	TRANSISTOR 2SC2785
Q302	8-729-178-54	TRANSISTOR 2SC2785
Q501	8-729-103-33	TRANSISTOR 2SD1310
Q502	8-729-177-43	TRANSISTOR 2SD774
Q503	8-729-177-43	TRANSISTOR 2SD774
Q504	8-729-117-54	TRANSISTOR 2SA1175
Q505	8-729-178-54	TRANSISTOR 2SC2785
Q506	8-729-178-54	TRANSISTOR 2SC2785
Q507	8-729-178-54	TRANSISTOR 2SC2785
Q508	8-729-178-54	TRANSISTOR 2SC2785
Q510	8-729-178-54	TRANSISTOR 2SC2785
Q601	8-729-203-05	TRANSISTOR 2SK30A-GR3
Q602	8-729-203-05	TRANSISTOR 2SK30A-GR3
Q603	8-729-664-48	TRANSISTOR 2SC1362-48
Q604	8-729-664-48	TRANSISTOR 2SC1362-48
Q605	8-729-664-48	TRANSISTOR 2SC1362-48
Q606	8-729-664-48	TRANSISTOR 2SC1362-48
Q607	8-729-178-54	TRANSISTOR 2SC2785
R201	1-246-461-00	CARBON 330 5% 1/4W
R202	1-246-461-00	CARBON 330 5% 1/4W
R203	1-246-461-00	CARBON 330 5% 1/4W
R204	1-246-505-00	CARBON 22K 5% 1/4W
R205	1-246-505-00	CARBON 22K 5% 1/4W
R206	1-246-461-00	CARBON 330 5% 1/4W
R207	1-246-481-00	CARBON 2.2K 5% 1/4W
R213	1-246-441-00	CARBON 47 5% 1/4W
R214	1-246-453-00	CARBON 150 5% 1/4W
R215	1-246-461-00	CARBON 330 5% 1/4W
R216	1-246-521-00	CARBON 100K 5% 1/4W
R218	1-246-501-00	CARBON 15K 5% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R219	1-246-505-00	CARBON 22K 5% 1/4W
R220	1-246-484-00	CARBON 3K 5% 1/4W
R221	1-246-497-00	CARBON 10K 5% 1/4W
R222	1-246-505-00	CARBON 22K 5% 1/4W
R223	1-246-513-00	CARBON 47K 5% 1/4W
R224	1-246-497-00	CARBON 10K 5% 1/4W
R225	1-246-449-00	CARBON 100 5% 1/4W
R229	1-246-521-00	CARBON 100K 5% 1/4W
R230	1-246-515-00	CARBON 56K 5% 1/4W
R301	1-246-449-00	CARBON 100 5% 1/4W
R302	1-246-513-00	CARBON 47K 5% 1/4W
R303	1-246-497-00	CARBON 10K 5% 1/4W
R304	1-246-519-00	CARBON 82K 5% 1/4W
R305	1-246-519-00	CARBON 82K 5% 1/4W
R306	1-246-425-00	CARBON 10 5% 1/4W
R307	1-246-473-00	CARBON 1K 5% 1/4W
R308	1-246-473-00	CARBON 1K 5% 1/4W
R309	1-246-425-00	CARBON 10 5% 1/4W
R310	1-246-481-00	CARBON 2.2K 5% 1/4W
R311	1-246-481-00	CARBON 2.2K 5% 1/4W
R312	1-246-485-00	CARBON 3.3K 5% 1/4W
R313	1-246-485-00	CARBON 3.3K 5% 1/4W
R314	1-246-497-00	CARBON 10K 5% 1/4W
R315	1-246-529-00	CARBON 220K 5% 1/4W
R316	1-246-477-00	CARBON 1.5K 5% 1/4W
R317	1-246-501-00	CARBON 15K 5% 1/4W
R318	1-246-473-00	CARBON 1K 5% 1/4W
R319	1-246-515-00	CARBON 56K 5% 1/4W
R320	1-246-497-00	CARBON 10K 5% 1/4W
R322	1-246-497-00	CARBON 10K 5% 1/4W
R323	1-246-529-00	CARBON 220K 5% 1/4W
R401	1-246-491-00	CARBON 5.6K 5% 1/4W
R402	1-246-477-00	CARBON 1.5K 5% 1/4W
R403	1-246-449-00	CARBON 100 5% 1/4W
R404	1-246-465-00	CARBON 470 5% 1/4W
R405	1-246-441-00	CARBON 47 5% 1/4W
R406	1-246-497-00	CARBON 10K 5% 1/4W
R407	1-246-442-00	CARBON 51 5% 1/4W
R408	1-246-497-00	CARBON 10K 5% 1/4W
R409	1-246-449-00	CARBON 100 5% 1/4W
R410	1-246-485-00	CARBON 3.3K 5% 1/4W
R411	1-246-473-00	CARBON 1K 5% 1/4W
R413	1-246-521-00	CARBON 100K 5% 1/4W
R414	1-246-521-00	CARBON 100K 5% 1/4W
R415	1-246-521-00	CARBON 100K 5% 1/4W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R416	1-246-443-00	CARBON	56	5%	1/4W
R417	1-246-443-00	CARBON	56	5%	1/4W
R418	1-246-443-00	CARBON	56	5%	1/4W
R419	1-246-477-00	CARBON	1.5K	5%	1/4W
R420	1-246-497-00	CARBON	10K	5%	1/4W
R501	1-246-480-00	CARBON	2K	5%	1/4W
R502	1-246-485-00	CARBON	3.3K	5%	1/4W
R504	1-246-509-00	CARBON	33K	5%	1/4W
R505	1-246-489-00	CARBON	4.7K	5%	1/4W
R506	1-246-527-00	CARBON	180K	5%	1/4W
R507	1-246-497-00	CARBON	10K	5%	1/4W
R508	1-246-497-00	CARBON	10K	5%	1/4W
R509	1-246-529-00	CARBON	220K	5%	1/4W
R510	1-246-521-00	CARBON	100K	5%	1/4W
R511	1-246-497-00	CARBON	10K	5%	1/4W
R512	1-246-497-00	CARBON	10K	5%	1/4W
R513	1-246-497-00	CARBON	10K	5%	1/4W
R514	1-246-497-00	CARBON	10K	5%	1/4W
R515	1-246-497-00	CARBON	10K	5%	1/4W
R516	1-246-497-00	CARBON	10K	5%	1/4W
R517	1-246-493-00	CARBON	6.8K	5%	1/4W
R518 ⚠	1-206-641-00	METAL OXIDE	110	5%	2W F
R519	1-246-457-00	CARBON	220	5%	1/4W
R520	1-246-521-00	CARBON	100K	5%	1/4W
R525	1-246-513-00	CARBON	47K	5%	1/4W
R601	1-246-519-00	CARBON	82K	5%	1/4W
R602	1-246-514-00	CARBON	51K	5%	1/4W
R603	1-246-514-00	CARBON	51K	5%	1/4W
R604	1-246-491-00	CARBON	5.6K	5%	1/4W
R605	1-246-489-00	CARBON	4.7K	5%	1/4W
R606	1-246-491-00	CARBON	5.6K	5%	1/4W
R607	1-246-545-00	CARBON	1M	5%	1/4W
R608	1-246-545-00	CARBON	1M	5%	1/4W
R609	1-246-489-00	CARBON	4.7K	5%	1/4W
R610	1-246-497-00	CARBON	10K	5%	1/4W
R611	1-246-501-00	CARBON	15K	5%	1/4W
R612	1-246-459-00	CARBON	270	5%	1/4W
R613	1-246-511-00	CARBON	39K	5%	1/4W
R614	1-246-491-00	CARBON	5.6K	5%	1/4W
R615	1-246-467-00	CARBON	560	5%	1/4W
R616	1-246-489-00	CARBON	4.7K	5%	1/4W
R617	1-246-491-00	CARBON	5.6K	5%	1/4W
R618	1-246-467-00	CARBON	560	5%	1/4W
R619	1-246-473-00	CARBON	1K	5%	1/4W
R620	1-246-516-00	CARBON	62K	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R621	1-246-461-00	CARBON	330	5%	1/4W
R622	1-246-505-00	CARBON	22K	5%	1/4W
R630	1-246-489-00	CARBON	4.7K	5%	1/4W
R631	1-246-473-00	CARBON	1K	5%	1/4W
RT201	1-226-238-00	RES, ADJ, CARBON 50K			
RT301	1-228-505-00	RES, ADJ, METAL GLAZE 10K			
RT302	1-226-238-00	RES, ADJ, CARBON 50K			
S1	1-554-267-00	SWITCH, ROTARY SLIDE; BAND SELECTOR			
S2	1-554-165-00	SWITCH, SLIDE; 9KHz/10KHz			
S501	1-552-174-00	SWITCH, PUSH			
S502	1-552-174-00	SWITCH, PUSH			
S503	1-552-174-00	SWITCH, PUSH			
S504	1-552-174-00	SWITCH, PUSH			
S505	1-552-174-00	SWITCH, PUSH			
S506	1-552-174-00	SWITCH, PUSH			
S507	1-552-174-00	SWITCH, PUSH			
S508	1-552-174-00	SWITCH, PUSH			
S509	1-552-174-00	SWITCH, PUSH			
S901	1-553-072-21	SWITCH, PUSH, POWER			
T401	1-405-927-00	COIL, MW OSC			
T402	1-405-955-00	COIL, SW1 OSC			
T403	1-406-022-00	COIL, SW2 OSC			
T404	1-401-910-00	COIL, SW1 ANT			
T405	1-401-975-00	COIL, SW2 ANT			
VS ⚠	1-526-576-61	SELECTOR, POWER VOLTAGE			
XT601	1-527-995-00	VIBRATOR, CRYSTAL			

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···